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82

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,762	12/10/2003	Raymond Hauser	36400.71US1	6553
25541	7590	02/09/2005	EXAMINER	
NEAL, GERBER, & EISENBERG SUITE 2200 2 NORTH LASALLE STREET CHICAGO, IL 60602			HANAN, DEVIN J	
			ART UNIT	PAPER NUMBER
			3745	

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/732,762

Applicant(s)

HAUSER ET AL.

Examiner

Devin Hanan

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25, 27, 28 and 30 is/are rejected.
- 7) ☒ Claim(s) 26 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/15/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 26 and 29 are objected to because of the following informalities: Claims 26 (page 15 line 7) and 29 (page 6 line 11) appear to omit the word "second" in the phrase "first and ___ valve ports formed in the valve block". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 24 recites, "the first and second port passages are not in the same plane" which is inaccurate because, figures 3 and 4 clearly show a plane that would encompass the central axis of both the first and second port passages.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7, 23 and 25-30 (26 and 29 as far as they are definite) are rejected under 35 U.S.C. 102(b) as being anticipated by Mangano et al. (U.S. Patent 6,295,811).

Mangano et al. discloses, a hydraulic drive system comprising:

a hydraulic pump (100),

a hydraulic motor (M),

at least two hydraulic lines (112, 114) connecting the hydraulic pump to the hydraulic motor and

a valve block (B2) having at least one connection to at least one of the hydraulic lines.

Regarding claim 2, Mangano et al. discloses at least one valve (107, 106) mounted therein for reducing the pressure rise rate in the at least one of the hydraulic lines.

Regarding claim 3, Mangano et al. discloses the valve block (B2) forms a portion of the hydraulic lines connecting the hydraulic pump to the hydraulic motor.

Regarding claim 4, Mangano et al. discloses the valve block is connected to the at least one hydraulic line by means of a tee fitting (located between valve 103, pump 100 and valve 120).

Regarding claim 5, Mangano et al. discloses a valve block that provides a fluid flow path between a pair of the hydraulic lines.

Regarding claim 7, Mangano et al. discloses a valve block that provides a fluid flow path between at least one hydraulic line and a separate fluid sump (R).

Regarding claim 23, Mangano et al. discloses a hydraulic pump (100) and a hydraulic motor (M);

a valve block comprising (B2):

a first port passage extending through the valve block and having a first opening and a second opening (where 112 enters and exits valve block B2), and a second port passage extending through the valve block and having a third opening and a fourth opening (where 114 enters and exits valve block B2);

a first valve port formed in the valve block and having a fifth opening and a second valve port formed in the valve block and having a sixth opening, wherein the first and second valve ports are each hydraulically connected to both the first and second port passages (112 and 114);

a first valve (106) mounted in the fifth opening of the valve block for controlling the connection between the first and second port passages and a second valve (107) mounted in the sixth opening of the valve block for controlling the connection between the first and second port passages;

a first set of hydraulic lines connected between the hydraulic pump and the first and third openings in the valve block (lines 112 and 114 above B2); and

a second set of hydraulic lines connected between the hydraulic motor and the second and fourth openings in the valve block (lines 112 and 114 above B2).

Regarding claim 25, Mangano et al. discloses a first valve (106) responsive to the pressure rise rate in the hydraulic line connected between the hydraulic pump and the first opening in the valve block and the second valve (107) responsive to the

Art Unit: 3745

pressure rise rate in the hydraulic line connected between the hydraulic pump and the third opening in the valve block.

Regarding claim 26, Mangano et al. discloses a valve block for use in connection with transferring hydraulic fluid between a hydraulic pump (100) and a hydraulic motor (M) comprising:

- a first set of openings formed in one side (side of B2 facing pump) of the valve block for hydraulically connecting the valve block to the hydraulic pump;

- a second set of openings formed in a second side (side of B2 facing the motor) of the valve block for hydraulically connecting the valve block to the hydraulic motor;

- a first port passage formed in the valve block and connecting one of the first set of openings to one of the second set of openings (112);

- a second port passage formed in the valve block and connecting the other of the first set of openings to the other of the second set of openings (114);

- first and valve ports (106 and 107) formed in the valve block, wherein the first and second valve ports are each hydraulically connected to both the first and second port passages;

- a first valve (106) mounted in the first valve port, wherein the first valve is closed during normal operation and opens when the pressure in the first port passage reaches a selected level to permit hydraulic fluid to bypass from the first port passage to the second port passage; and

- a second valve (107) mounted in the second valve port, wherein the second valve is closed during normal operation and opens when the pressure in the second

Art Unit: 3745

port passage reaches a selected level to permit hydraulic fluid to bypass from the second port passage to the first port passage.

Regarding claim 27, Mangano et al. discloses the first and second port passages (112 and 114) are parallel to one another.

Regarding claim 28, Mangano et al. discloses the first and second valve ports (106 and 107) are parallel to one another and perpendicular to the first and second port passages.

Regarding claim 29, Mangano et al. discloses a hydraulic pump (100) and a hydraulic motor (M) mounted on the vehicle; and

a valve block (B2) mounted on the vehicle separate from the hydraulic pump and hydraulic motor, the valve block comprising;

a first set of openings formed in one side (side of B2 facing pump) of the valve block for hydraulically connecting the valve block to the hydraulic pump and a second set of openings formed in a second side (side of B2 facing the motor) of the valve block for hydraulically connecting the valve block to the hydraulic motor;

a first port passage (112) formed in the valve block and connecting one of the first set of openings to one of the second set of openings;

a second port passage (114) formed in the valve block and connecting the other of the first set of openings to the other of the second set of openings;

first and valve ports formed in the valve block, wherein the first and second valve ports (106 and 107) are each hydraulically connected to both the first and second port passages; and

first and second valves (106 and 107 respectively) each mounted in one of the valve ports, wherein both valves are closed during normal operation of the hydraulic pump and motor, and wherein the first valve opens when the pressure in the first port passage reaches a selected level to permit hydraulic fluid to bypass from the first port passage to the second port passage and the second valve opens when the pressure in the second port passage reaches a selected level to permit hydraulic fluid to bypass from the second port passage to the first port passage.

Regarding claim 30, Mangano et al. discloses first and second valve ports (106 and 107) that are parallel to one another and perpendicular to the first and second port passages (112 and 114).

Claims 12-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakikawa et al. (U.S. Patent 5,333,451).

Sakikawa et al. discloses a first port (left port 21) formed in the valve block and having a first opening and a second opening;

a second port (right port 21) formed in the valve block and having a third opening and a fourth opening;

a third port (22) formed in the valve block and having a fifth opening, wherein the third port intersects both the first and second ports;

a first valve (valve in left port 21) mounted in the first opening of the valve block and connecting the first port to the third port;

a second valve (valve in right port 21) mounted in the third opening of the valve block and connecting the second port to the third port;

a first hydraulic line (left portion of 13) connected between the hydraulic pump (11) and the hydraulic motor (12) and comprising a first connection member between the first hydraulic line and the second opening of the first port;

a second hydraulic line (right portion of 13) connected between the hydraulic pump and the hydraulic motor and comprising a second connection member between the second hydraulic line and the fourth opening of the second port; and

a third return hydraulic line (15) extending from the fifth opening (19) of the valve block.

Regarding claim 13, Sakikawa et al. discloses the first and second ports (both 21) are parallel.

Regarding claim 14, Sakikawa et al. discloses the third port (22) is perpendicular to both the first and second ports (both 21).

Regarding claim 15, Sakikawa et al. discloses the third hydraulic line connecting the valve block to an inlet to the hydraulic pump (fluid flows from port 22 through 19 to conduit 15 through check valve 16 and to the inlet of pump 11).

Regarding claim 16, Sakikawa et al. discloses the third hydraulic line connecting the valve block to a separate fluid sump (during situations where port 22 is at a high enough pressure the valve 17 does open up to permit flow to the sump).

Regarding claim 17, Sakikawa et al. discloses a first hydraulic pump (11) mounted on the vehicle and a first hydraulic motor (12) mounted on the vehicle, wherein

Art Unit: 3745

the first hydraulic motor is connected to the first hydraulic pump by means of first and second hydraulic lines (both 13);

a first valve block (18) mounted on the vehicle at a distance from both the first hydraulic pump and the first hydraulic motor, the first valve block comprising a first port (left port 21) connected to the first hydraulic line by means of a first connection member, a second port (right port 21) connected to the second hydraulic line by means of a second connection member and a third port (22) having a third hydraulic line (15) extending therefrom, wherein the third port intersects both the first and second ports;

a first valve (valve in left port 21) mounted in the valve block and connecting the first port to the third port; and

a second valve (valve in right port 21) mounted in the valve block and connecting the second port to the third port.

Regarding claim 18, Sakikawa et al. discloses a third hydraulic line that is connected to an inlet of the first hydraulic pump (fluid flows from port 22 through 19 to conduit 15 through check valve 16 and to the inlet of pump 11).

Regarding claim 19, Sakikawa et al. discloses a third hydraulic line that is connected to a separate fluid sump (during situations where port 22 is at a high enough pressure the valve 17 does open up to permit flow to the sump).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 3745

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mangano et al. in view of Sakikawa et al.

Mangano et al. discloses all of the above claimed elements, but does not disclose a fluid flow path between at least one hydraulic line and an inlet to the hydraulic pump.

Sakikawa et al. teaches to use a multidirectional pump (11) with hydraulic lines connected to the inlet and the outlet, for use in a hydraulic system for the purpose of eliminating the need for a valve system to reverse the rotation of the motor.

Since Mangano et al. and Sakikawa et al. are both from the same field of endeavor; the purpose disclosed by Sakikawa et al. would have been recognized in the pertinent art of Mangano et al. It would have been obvious at the time the invention was made to one having ordinary skill in the art to replace the unidirectional pump and control valve combination of Mangano et al. with a bidirectional pump as taught by Sakikawa et al. in order to eliminate the need for a valve system to reverse the rotation of the motor.

Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa et al. (U.S. Patent 5,282,363) in view of Mangano et al.

Regarding claim 8; Ogawa et al. discloses a first hydraulic pump (11) driven by the prime mover and a first hydraulic motor (19);

a first set of at least two hydraulic lines (13 and 38 by way of the reservoir) connecting the first hydraulic pump to the first hydraulic motor;

a first valve having at least one connection to at least one of the first set of hydraulic lines, the first valve block having a first valve mounted therein for reducing the pressure rise rate in at least one of the first set of hydraulic lines(17);

a second hydraulic pump (21) driven by the prime mover and a second hydraulic motor (not shown, but equivalent to 19, col. 3, lines18-22);

a second set of at least two hydraulic lines (13 and 38 by way of the reservoir) connecting the second hydraulic pump to the second hydraulic motor; and

a second valve having at least one connection to the at least one of the second set of hydraulic lines, the second valve block having a second valve mounted therein for reducing the pressure rise rate in at least one of the second set of hydraulic lines (not shown, but equivalent to 17, col. 3, lines18-22).

Regarding claim 9, Ogawa et al. discloses in the first valve system, a third valve (17) mounted therein for reducing the pressure rise rate in the other of the first set of hydraulic lines and in the second valve system, a fourth valve (not shown, but equivalent to 17, col. 3, lines18-22) mounted therein for reducing the pressure rise rate in the other of the second set of hydraulic lines.

Regarding claim 10, Ogawa discloses a zero turn vehicle (motors 11 and 21 can operate independently of one another making the vehicle capable of being considered a zero turn vehicle).

Ogawa et al. thus discloses all of the above claimed elements but does not disclose the valves are contained in a valve block.

Mangano et al. teaches putting valves in a valve block for the purpose of incorporating the valves in the casing of the motor (col.9, lines 29-34).

Since the bypass valves of Ogawa et al. and Mangano et al. are functionally equivalent in the art, the purpose disclosed by Mangano et al. would have been recognized in the pertinent art of Ogawa et al. It would have been obvious at the time the invention was made to one having ordinary skill in the art to modify the valves of Ogawa et al. in order to form a valve block as taught by Mangano et al. in order to incorporate the valves in the casing of the motor.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa et al. in view of Mangano et al and further in view of Heal et al. (U.S. Patent 6,056,074).

Ogawa et al. as modified by Mangano et al. in the rejection of claim 10, discloses all of the above claimed elements, but do not disclose a zero turn vehicle comprising a mowing machine.

Heal et al. teaches that many zero turn vehicles are mowers (col. 2, lines 24-25) because zero turn vehicles have the ability to perform tight trimming operations (col. 1, lines 37-38).

Since Ogawa et al. and Heal et al. are from the same field of endeavor; zero turn vehicles) the purpose disclosed by Heal et al. would have been recognized in the pertinent art of Ogawa et al. It would have been obvious at the time the invention was

Art Unit: 3745

made to one having ordinary skill in the art to modify the zero turn vehicle of Ogawa et al. in order to include a mower, as taught by Heal et al. to allow the vehicle to perform tight trimming operations.

Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakikawa et al. in view of Ogawa et al.

Regarding claims 20-22, Sakikawa et al. discloses all of the above claimed elements (see rejection of claim 17-19), but does not disclose having two similar hydraulic systems comprising pumps, motors, and valve blocks:

Ogawa et al. teaches having two similar hydraulic systems, for the purpose of independently operating two motors (col. 1 lines 45-49).

Since Sakikawa et al. and Ogawa et al. are in the same field of endeavor; the purpose disclosed by Ogawa et al. would have been recognized in the pertinent art of Sakikawa. It would have been obvious at the time the invention was made to one of ordinary skill in the art to make two independent hydraulic systems of Sakikawa et al. as taught by Ogawa et al. in order to independently operate two motors.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devin Hanan whose telephone number is 571-272-6089. The examiner can normally be reached on Monday through Friday.

Art Unit: 3745

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on 571-272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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2/7/05